Examination (1)

A-Complete:

1-…………is used for measuring the current intensity , while …….is used to measure the potential difference.

B-Correct the underlined words:

1-The fused ear pinna is a dominant hereditary trait.

2-Coulomb is used for measuring the electromotive force.

C-Write the scientific term:

1-Substance that gives Oxygen or take Hydrogen.

2-The state of the conductor that allows the passage of electricity from or to it.

D-Explain each of the following:

On pollination of a red flowered pea plant with a white flowered pea plant , all offspring are red flowered.

E-Choose the correct answer

1-Which of the following is dominant in humans

(Smooth hair – Blue coloured eyes – absence of freckles)

G-What is meant by the principle of complete dominance

Give one example

Examination (2)

A-Choose the correct answer:

1-Heating of calcium carbonates produces:

a-Calcium bicarbonate and carbon dioxide

b-Calcium hydroxide and carbon dioxide

c-calcium oxide and carbon monoxide.

d-Calcium oxide and carbon dioxide.

2-The unit that is used in measuring electric resistance is …………

a-Ampere   b- Ohm   c- volt   d- coloumb

B-Explain :

1-Burning of the steel scoures used for cleaning aluminium in a jar full of Oxygen is faster than its burning in atmospheric air

C-What is meant by :

1-Natural radioactivity.

D-What would happen to:

1-Intensity of the electric current passing through the circuit , when the wire length of the slidding rheostat is increased

E-Write the balanced chemical equations for the following reactions:

1-Addition of magnesium to copper sulphate solution

2-Addition of Zinc to dilute hydrochloric acid.

3-Heating of sodium nitrates.

F-Given three identical electric cells , the e.m.f of each is 1.5 volt show by drawing how to connect them to produce

1-A battery of e.m.f = 1.5 volts

2-A battery its e.m.f = 3 volts

3- A battery its e.m.f = 6 volts

G-Calculate the amount of electricity that passes through resistance 2200 Ohms for 2 minutes when it connected with a source of electric potential 220 volt

H-What is the scientific ideas for:

1-The dominance of presence of cheek dimples over their absence

What are precautions on dealing with the radioactive wastes

Examination (3)

A-Choose the correct answer:

The potential difference is measured by using ………. Apparatus

a-ammeter b-Ohmmeter c- voltameter d-Wattmeter

2-The substance which changes the rate of the chemical reactions without itself being changed is known as …….

a-Oxidizing agent b- reducing agent c- active agent d-Catalyst

B-What is meant by :

1-Dominant trait 2-Radioactive element

C-Write the difference between:

1-Connection of cells in series and in parallel(according to the resulted e.m.f)

D-What would happen to:

1-Ammeter and voltmeter if the resistance is burnet

E-Write the balanced chemical equations for the following reactions

1-Reaction of hot copper oxide and Oxygen.

2-Addition of hydrochloric acid to calcium hydroxide solution

3-Placing aluminium turnings to dilute hydrochloric acid

F-Mention each of the following :

1-Mendel's second law.

2-The two types of electric resistance

G-Draw the circuit used to deduce the relation between the intensity of an electric current passing through a resistance and the potential difference between its terminals

Examination (4)

A-Complete the following :

1-Electric current intensity is measured by ………… apparatus and its measuring unit is …………

2-The resistance faces the flow of electric current in a conductor is known as ……

Write the scientific trem:

1-Chemical reactions in which double exchange of ions of two different compounds to produce two new compounds takes place.

2-The substance that takes oxygen or gives hydrogen during a chemical reaction

3-The changing in concentration of the reactants and products per a unit time.

Compare between Oxidation and reduction

B-Show by drawing how electric cells are connected in:

1-Series 2-Parallel

C-Write the balance chemical equations:

1-Reaction of Sodium with water

2-Reaction of hydrochloric acid with sodium hydroxide , then mention the name of the reaction

D-Mention the factors that affect the rate of chemical reaction

Examination (5)

A-Complete the following

1-Red mercuric oxide decomposes by heat into ……………. And …………

2-$2NaNO_3 \longrightarrow$ ....+.....................

3-$Zn + 2HCl \longrightarrow$ ....+………..

4-The factors that affect the speed of chemical reaction are ………..,……….,……. and…….

B-Compare between direct and alternating current

C-What'ssmeant by each of the following :

1-Radioactivity

D-Give reason for :

1-Learn to walk in children is not considered a genetic trait.

2-Red precipitate is formed on addition of magnesium to copper sulphate solution.

Final revision:

Answer the following questions:

1-Calculate the quantity of electricity when an electricity when an electric current of intensity 18 ampere passes for 7 mintes through a conductor

2-Calculate the electric current intensity when a quantity of electricity of 600 coloumb passes for 3 minute in a conductor.

3-Calculate the potential difference between two points , if the work done to transfer a charge of 600 coloumb is 16600 joule.

4-Calculate the potential difference between the terminals of an electric set its resistance is 30 Ohm and the intensity of the passing electric current is 10 ampere.

5-Use the following symbols to express the results of mating between a short stemmed pea plant (tt) and a long stemmed pea plant (TT)

Put (√) or (x):

1-Fluoride ion is a negative ion as it loses an electron.

2-The ability to roll the tongue in a tube shape from the dominant trait in human.

3-Dynamo produces an alternating current.

تمت المراجعة والإجازة / أسم المراجع : سعيد محمد على

General exams

on Third preparatory second term science curriculum

2017/2018

Model Exam (1)

Answer the following questions.

First Question:

A. Complete the following statements:

1) The gland that secretes a hormone in order to regulate the growth of the body as a whole is …… ………..
2) The …… ………. is used to measure the electric current intensity, while the …… …… is used to measure the potential difference.

B. Correct the underlined phrases in the following statements:

1) The attached ear lobe trait is one of the dominant traits.
2) The measuring unit of the electromotive force is the Coulomb.

Second Question:

A. What is the scientific term expressed by each statement:

1) Chemical substances (messages) that control and organize most of the vital activities and functions in the body.
2) The substance that adds oxygen or removes hydrogen from another substance.
3) The state of the conductor that allows electricity to flow from or to it.

B. Explain:

1) The pituitary gland is called the "Master" gland.
2) Cross pollination of a pea plant of red flowers with a pea plant of white flowers gives plants all have red flowers.

Third Question:

A. Choose the proper answer:

1) Calcitonin hormone is secreted by ……….

a- Pancreas b- Thyroid gland c- Pituitary gland d- Adrenal glands

2) Which of the following is a dominant trait in Man?
   a- Straight hair b- soft hair c- Blue eyes d- absence of freckle

B. What would happen ……..?
   1) To the level of sugar in the blood if pancreas stopped secreting the glucagon hormone.
   2) To the electric current intensity in a circuit if the length of the rheostat wire is increased.

Fourth Question:

A. Compare between: Direct current and Alternating current.
B. What is meant by complete dominance? Give examples.

Answers Model Exam (1)

First Question:

A. Complete the following statements:

1) The gland that secretes a hormone in order to regulate the growth of the body as a whole is ……Pituitary gland………..

2) The ……Ammeter……… is used to measure the electric current intensity, while the ……Voltmeter…… is used to measure the potential difference.

B. Correct the underlined phrases in the following statements:

1) The attached ear lobe trait is one of the dominant traits. (free)

2) The measuring unit of the electromotive force is the Coulomb. (Volt)

Second Question:

A. What is the scientific term expressed by each statement:

1) Chemical substances (messages) that control and organize most of the vital activities and functions in the body. (hormones)

2) The substance that adds oxygen or removes hydrogen from another substance. (oxidizing agent)

3) The state of the conductor that allows electricity to flow from or to it. (the electric potential)

B. Explain:

1) The pituitary gland is called the "Master" gland.

Because it secretes hormones that regulate the activity of most of the other endocrine glands.

2) Cross pollination of a pea plant of red flowers with a pea plant of white flowers gives plants all have red flowers.

Because the red flower trait is dominant while the white flower trait is recessive.

Third Question:

A. Choose the correct answer:

1) Calcitonin hormone is secreted by ……….
a- Pancreas b- Thyroid gland c- Pituitary gland d- Adrenal glands

2) Which of the following is a dominant trait in Man?

b- Straight hair b-narrow eyes c- Blue eyes d- absence of freckle

B. What would happen ……..?

1) To the level of sugar in the blood if pancreas stopped secreting the glucagon hormone.

The liver would not be stimulated to convert the stored glycogen into glucose that should be released into the blood stream, so the level of glucose would fall in the blood.

2) To the electric current intensity in a circuit if the length of the rheostat wire is increased.

The electric current intensity would decrease since increasing the wire length would increase the resistance to the flow of the current.

Fourth Question:

A .Compare between: Direct current and Alternating current.

Direct current	Alternating current
Obtained from electric cells (dry cells) and batteries.	Obtained from electric generators (Dynamos)
Low intensity per cell	High intensity
Flows in one direction	Changes its direction periodically
Can be transferred only for a short distance	Can be transferred for a long distance
Used in electroplating and operating some electric appliances.	Used in operating machines in factories and lighting houses and streets.

B. What is meant by complete dominance? Give examples.

Complete dominance means that on crossing two individuals having pure contrasting traits, one of the two traits appear in all offspring of the first generation.

Examples in the pea plant include:

- The long-stem trait dominates the short –stem trait.
- The red flower trait dominates the white flower trait.
- The side position of flower trait dominates the end position of flower trait.
- The smooth seed trait dominates the wrinkled seed trait.
- The swollen pod trait dominates the sinuous pod trait
- The green pod color trait dominants the yellow pod color trait.

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Model Exam (2)

Answer the following questions.

First Question:

A. Choose the proper answer for each statement:

1) On heating calcium carbonate, we obtain ………
   a- Calcium bicarbonate and carbon dioxide.
   b- Calcium hydroxide and carbon dioxide.
   c- Calcium oxide and carbon monoxide.
   d- Calcium oxide and carbon dioxide.
2) The electric resistance is measured in …….
   a- Amperes   b- Ohms   c- Volts   d- Coulombs

B. Give reasons for:

1) Wire scourers burns inside a jar full of oxygen at a faster rate than it does in atmospheric air.
2) Some persons suffer overgrowth in their bones that make them giants.

C. Define each of the following:

1) Diabetes
2) Natural radioactivity.

Second Question:

Compare each pair:

1) Ionic and Covalent compounds in terms of rate of their reaction.
2) Physical and genetic effect and cellular effect of radioactivity

Third Question:

A. Write down the symbolic balanced equations that express the following reactions.

1) Adding magnesium to copper sulphate solution
2) Adding zinc to diluted hydrochloric acid.
3) Heating sodium nitrate.

B. State the law:

1) Mendel’s first law (law of segregation).
2) Ohm’s law.

C. You have got four identical bell, the electromotive force of each is 1.5 Volt. You are asked to sketch diagrams to show how these cells can be connected all to obtain a battery of electromotive force:
   1) 6 Volts.
   2) 3 Volts
   3) 1.5 Volts

Fourth Question:

A. Find the quantity of charge passing during two minutes through a cross section of a conductor of resistance 2200 Ohm when the potential difference across its terminals is 220 Volts.
B. What is the heredity principle that makes the inheritance of check dimples trait dominate the trait of their absence?
C. What are the precautions should be considered when dealing with radioactive wastes?

Answers Model Exam (2)

First Question:

A. Choose the proper answer for each statement:

1) On heating calcium carbonate, we obtain ………

a- Calcium bicarbonate and carbon dioxide.

b- Calcium hydroxide and carbon dioxide.

c- Calcium oxide and carbon monoxide.

d-Calcium oxide and carbon dioxide.

2) The electric resistance is measured in …….

a-Amperes   b- Ohms   c- Volts   d- Coulombs

B. Give reasons for:

1) Wire scourers burns inside a jar full of oxygen at a faster rate than it does in atmospheric air.

Because concentration of oxygen in the jar is higher than that in atmospheric air.

2) Some persons suffer overgrowth in their bones that make them giants.

Due to the excess secretion of the growth hormone secreted by pituitary gland in childhood.

c.Define each of the following:

1) Diabetes

A disease caused when the cells are unable to use glucose due to the decrease in the secretion of the insulin hormone. Symptoms include feeling thirst and frequent urination times.

2) Natural radioactivity.

Spontaneous decay of nuclei of some elements exist in nature to achieve more stable composition.

Second Question:

Compare each pair:

1) Ionic and Covalent compounds in terms of rate of their reaction.

Point of comparison	Ionic compounds	Covalent compounds
Rate of their reaction	Fast in their reaction since they dissociate into ions, where the reaction takes place between their ions.	slower in their reaction since they do not dissociate into ions, The reaction takes place between the molecules of the covalent compounds.

2) Physical and genetic effect and cellular effect of radioactivity

Physical and genetic effect of radioactivity	cellular effect of radioactivity
It causes changes in the composition of sex chromosomes	It causes changes in the cell composition and changes in the hemoglobin composition that becomes unable to carry oxygen

Third Question:

A. Write down the symbolic balanced equations that express the following reactions.

1) Adding magnesium to copper sulphate solution.

$$\mathbf{Mg + Cu\,SO_4 \rightarrow Mg\,SO_4 + Cu\downarrow}$$

2**)** Adding zinc to diluted hydrochloric acid.

$Zn + 2\ HCl \rightarrow ZnCl_2 + H_2 \uparrow$

3) Heating sodium nitrate **.**

$2\ NaNO_3 \xrightarrow{\Delta} 2\ NaNO_2 + O_2 \uparrow$

B. State the law:

1) Mendel's first law (law of segregation).

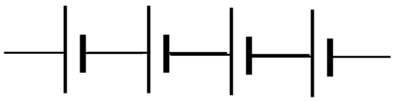
When two individuals of any pair of hereditary contrasting traits, only the dominant trait appears in the first generation, while the two traits appear in the second generation at a ratio 3 dominant : 1 recessive.

2) Ohm's law.

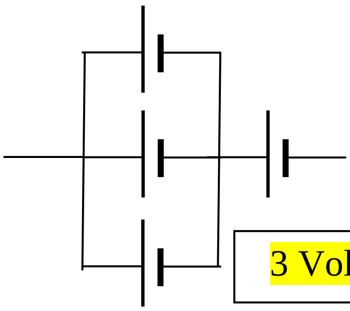
The electric current intensity through a conductor is directly proportional to the potential difference between its terminals at constant temperature.

C. You have got four identical bell, the electromotive force of each is 1.5 Volt. You are asked to sketch diagrams to show how these cells can be connected all to obtain a battery of electromotive force:

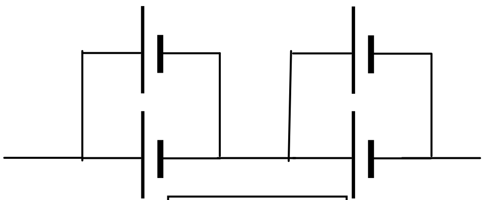
1) 6 Volts.
2) 3 Volts
3) 1.5 Volts



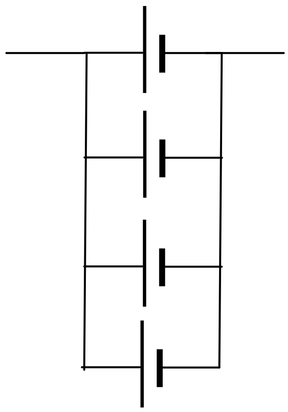
6 Volts



3 Volts



3 Volts



1.5 Volts

Fourth Question:

A. Find the quantity of charge passing during two minutes through a cross section of a conductor of resistance 2200 Ohm when the potential difference across its terminals is 220 Volts.

Current intensity (I) = $\frac{potential\ difference(V)}{resistance\ (R)}$

$= \frac{220}{2200} = 0.1\ Ampere$

Quantity of charge (Q) = Current intensity (I) x time (t)

= 0.1 x 2 x 60 = 12 Coulomb

B. What is the heredity principle that makes the inheritance of check dimples trait dominate the trait of their absence? Complete dominance

C. What are the precautions should be considered when dealing with radioactive wastes?

- These wastes should be away from underground water streams not to be polluted.
- The region chosen to bury the radioactive wastes should be stable and not exposed to earthquakes or volcanoes.
- The region chosen to store the radioactive wastes should be away from animals that live in caves.
- Not to drain hot water directly from reactors into the sea.
- Avoiding to be exposed to radiation over the allowed dose (5 Rem per day)
- Wear protective cloths and gloves.

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Model Exam (3)

Answer the following questions.

First Question:

A. Choose the proper answer for each statement:

1) The hormone that controls the levels of calcium and phosphorous in the blood is ….

   a- Calcitonin b- Thyroxin c- Insulin d- Adrenalin

2) The potential difference is measured by a device called the ……

   a- Ammeter b- Ohmmeter c- Voltmeter d- Barometer

3) The substance that changes the rate of the chemical reaction but it does not itself change is known as a …..

   a- Oxidizing agent b- Reducing agent c- Activating agent d- Catalyst

B. Give reasons for:

1) Stopping the body growth leading to dwarfism.
2) Sodium can substitute the hydrogen of acids.

Second Question:

A. Mention the function of:

1) Thyroxin hormone
2) Glucagon hormone

B. Compare each pair:

1) Connecting cells in series and in parallel.
2) Oxidation and Reduction.

Third Question:

A. Write down the symbolic balanced equations that express the following reactions.

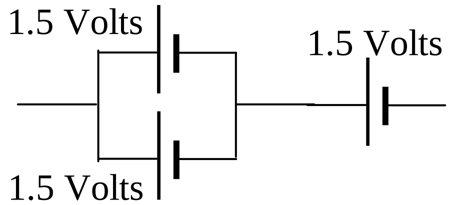
1) Reduction of hot copper oxide by passing over hydrogen gas.
2) Adding sodium hydroxide solution to hydrochloric acid.
3) Putting aluminum pieces into diluted hydrochloric acid.

B. State:

1) Mendel's second law (independent assortment of the hereditary factors).
2) Types or resistors.

Fourth Question:

A. Using the given diagram, calculate the total electromotive force.



B. Draw the electric circuit used to verify the relation between the electric current intensity through a resistor and the potential difference across it.

Answers Model Exam (3)

First Question:

A.Choose the proper answer for each statement:

1) The hormone that controls the levels of calcium and phosphorous in the blood is ….

b- Calcitonin   b- Thyroxin   c- Insulin   d- Adrenalin

2) The potential difference is measured by a device called the ……

b- Ammeter   b- Ohmmeter   c- Voltmeter   d- Barometer

3) The substance that changes the rate of the chemical reaction but it does not itself change is known as a …..

b- Oxidizing agent   b- Reducing agent   c- Activating agent   d- Catalyst

B.Give reasons for:

1) Stopping the body growth leading to dwarfism.

Due to a decrease in the secretion of the growth hormone secreted by the pituitary gland in childhood.

2) Sodium can substitute the hydrogen of acids.

Because sodium is chemically more reactive than hydrogen.

Second Question:

A. Mention the function of:

1) Thyroxin hormone

It plays the main role in the food assimilation processes in the body.

2) Glucagon hormone

It raises the sugar level in the blood by stimulating the liver to convert the stored glycogen into glucose released into the body stream.

B. Compare each pair:

1) Connecting cells in series and in parallel.

Point of comparison	Connecting cells in series	Connecting cells in parallel
The produced electromotive force	Equals the sum of the electromotive forces of the connected cells	Equals the electromotive forces of one cell of the connected cells

2)Oxidation and Reduction.

Point of comparison	Oxidation	Reduction
The concept	A chemical process in which the ratio of oxygen in a substance increases or the ratio of hydrogen decreases. Or the chemical process in which the element atom loses one electron or more.	A chemical process in which the ratio of oxygen in a substance decreases or the ratio of hydrogen increases. Or the chemical process in which the element atom gains one electron or more.

Third Question:

A. Write down the symbolic balanced equations that express the following reactions.

1)Reduction of hot copper oxide by passing over hydrogen gas.

$$\mathbf{Cu\,O + H_2 \xrightarrow{\Delta} Cu + H_2\,O}$$

2)Adding sodium hydroxide solution to hydrochloric acid.

$$\mathbf{Na\,OH + H\,Cl \rightarrow Na\,Cl + H_2\,O}$$

3) Putting aluminum pieces into diluted hydrochloric acid.

$$\mathbf{2\,Al + 6\,H\,Cl \rightarrow 2Al\,Cl_3 + 3\,H_2 \uparrow}$$

B. State:

1) Mendel's second law (independent assortment of the hereditary factors).

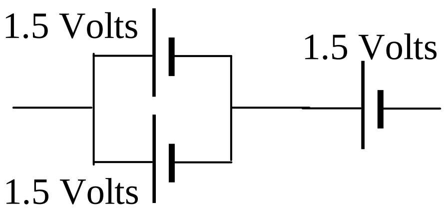
When two individuals bearing a pair or more of constructing traits are crossed, the trait of each pair is inherited independently of the others and appears in the second generation at a ratio 3:1

2) Types or resistors.

There are two types of resistors: fixed and variable

Fourth Question:

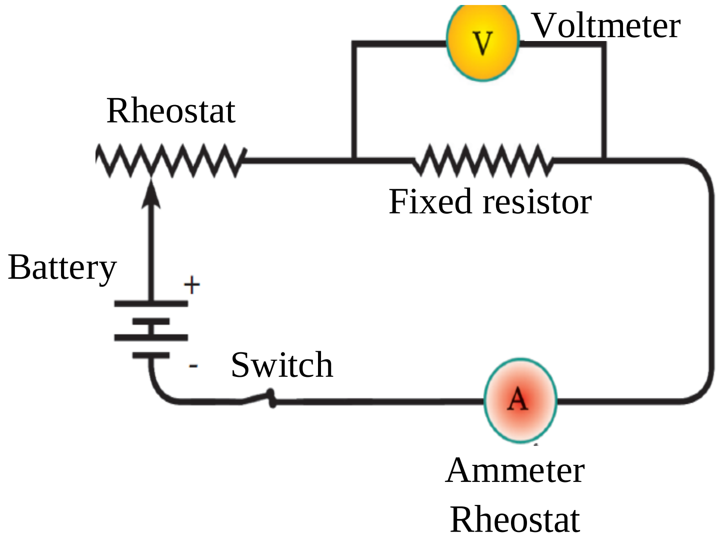
A. Using the given diagram, calculate the total electromotive force.



The electromotive force = 1.5 + 1.5 = 3 Volts

B.Draw the electric circuit used to verify the relation between the electric current intensity through a resistor and the potential difference across it.

Diagram



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Model Exam (4)

Answer the following questions.

First Question:

A. Complete the following statements:

1) The hormone that stimulates the storage of glucose in the liver is ….. …
2) The electric current intensity is measured by the … …. and its measuring unit is the …. …
3) The chromosome is composed chemically from a nucleic acid called ….. … bind with …. …
4) The opposition to the flow of the electric current as it passes through a conductor is known as the ….. …

B. Give reasons for:

1) The alternating current is preferred in daily use than the direct current.
2) Magnesium can replace copper in its salt solutions but the reverse does not happen.

Second Question:

A. Compare each pair:

1) The oxidizing agent and the reducing agent.
2) Oxidation and Reduction.

B. Sketch a diagram to show the ways of connecting the electric cells together.

C. A conductor of resistance 22 Ohms and the quantity of electricity flowing through a given cross section in one second is 10 Coulombs. Find the potential difference between its terminals.

Third Question:

A. Draw the electric circuit used to verify Ohm's law. Then state the law and write down the mathematical expression.

B. Write down the symbolic balanced equations that express the following reactions.

1) The reaction of water and sodium. Then mention the precautions considered when handling sodium.
2) The reaction of hydrochloric acid and sodium hydroxide solution. Then mention the name of the reaction.

C. Mention the factors that affect the speed of the chemical reaction.

Fourth Question:

A. Mendel has set a group of hypotheses to explain the appearance of the dominant trait and the disappearance of the recessive trait in the first generation. He carried out some experiments to study these hypotheses. State these hypotheses.

B. What is the scientific explanation of the dominancy of the curly hair trait over the straight hair trait?

Answers Model Exam (4)

First Question:

A.Complete the following statements:

1)The hormone that stimulates the storage of glucose in the liver is …..Insulin…

2)The electric current intensity is measured by the …ammeter …. and its measuring unit is the ….Ampere…

3)The chromosome is composed chemically from a nucleic acid called …..DNA… bind with ….Protein…

4)The opposition to the flow of the electric current as it passes through a conductor is known as the …..electric resistance…

B.Give reasons for:

1) The alternating current is preferred in daily use than the direct current.

- It can be transmitted for a long distance.
- It can be converted into direct current.
- It can used in operating machines and lighting houses and streets.

2) Magnesium can replace copper in its salt solutions but the reverse does not happen.

Because Magnesium is chemically more reactive than copper

Second Question:

A.Compare each pair:

1) The oxidizing agent and the reducing agent.

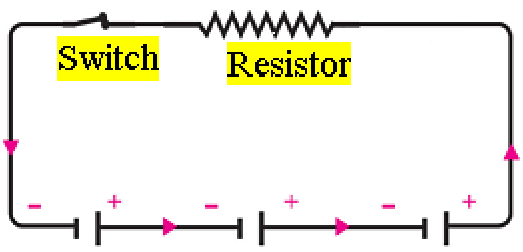
Point of comparison	The oxidizing agent	the reducing agent
The concept	A chemical substance that gives oxygen to a substance or removes hydrogen from it during the chemical reaction. Or the chemical substance that gains one electron or more during the chemical reaction.	A chemical substance that removes oxygen from a substance or gives hydrogen to it during the chemical reaction. Or the chemical substance that loses one electron or more during the chemical reaction.

2)Oxidation and Reduction.

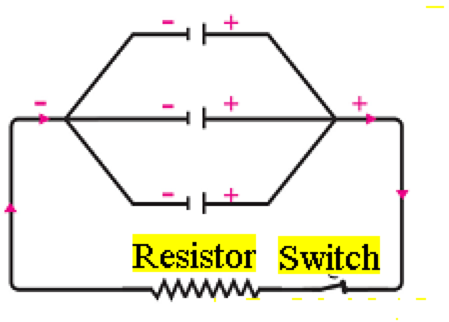
Point of comparison	Oxidation	Reduction
The concept	A chemical process in which the ratio of oxygen in a substance increases or the ratio of hydrogen decreases. Or the chemical process in which the element atom loses one electron or more.	A chemical process in which the ratio of oxygen in a substance decreases or the ratio of hydrogen increases. Or the chemical process in which the element atom gains one electron or more.

B.Sketch a diagram to show the ways of connecting the electric cells together.

1- In series



2- In parallel



B.A conductor of resistance 22 Ohms and the quantity of electricity flowing through a given cross section in one second is 10 Coulombs. Find the potential difference between its terminals.

$$\text{Current intensity (I)} = \frac{\text{Quantity of charge (Q)}}{\text{time (t)}}$$
$$= \frac{10}{1} = 10 \text{ Ampere}$$

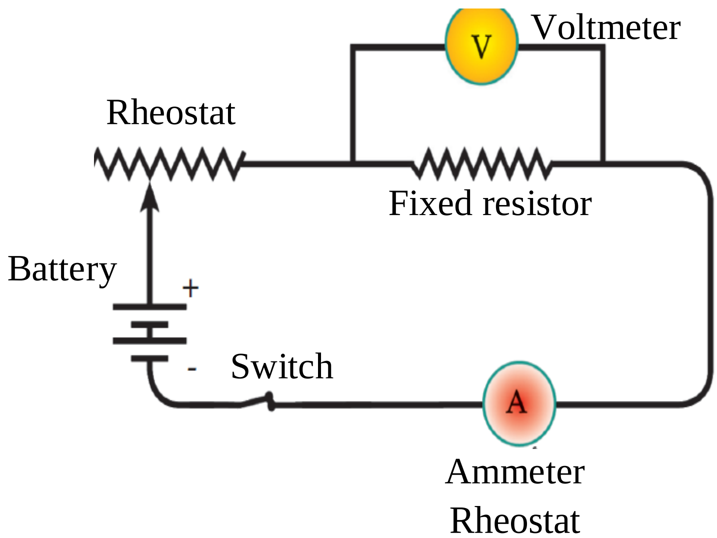
potential difference(V) = Current intensity (I) x resistance (R)

= 10 x 22 = 220 Volts

Third Question:

A.Draw the electric circuit used to verify Ohm's law. Then state the law and write down the mathematical expression.

Diagram



The electric current intensity through a resistor is directly proportional to the potential difference across it at constant temperature.

$$resistance\ (R) = \frac{potential\ difference(V)}{\text{Current intensity (I)}}$$

B. Write down the symbolic balanced equations that express the following reactions.

1) The reaction of water and sodium. Then mention the precautions considered when handling sodium.

$$\mathbf{2Na + 2H_2O \rightarrow 2Na\,OH + H_2\uparrow}$$

Precautions:
- keeping sodium under kerosene.
- putting a small piece of sodium carefully in water since this reaction is vigorous.

2) The reaction of hydrochloric acid and sodium hydroxide solution. Then mention the name of the reaction.

$$\mathbf{Na\,OH + H\,Cl \rightarrow Na\,Cl + H_2O}$$

This reaction is called neutralization reaction.

c. Mention the factors that affect the speed of the chemical reaction.

- Nature of reactants.
- Concentration of reactants.
- Temperature of the reaction.
- Catalysis

Fourth Question:

A. Mendel has set a group of hypotheses to explain the appearance of the dominant trait and the disappearance of the recessive trait in the first generation. He carried out some experiments to study these hypotheses. State these hypotheses.

To explain the appearance of the dominant trait and the disappearance of the recessive trait in the first generation, Mendel set a group of hypotheses:

- Hereditary traits are transmitted from parents to offspring through hereditary factors called genes.
- Each hereditary trait is controlled by two factors; one from the male parent and the other from the female parent.
- These factors are similar if the trait is pure (pure individual), and the two factors are different if the trait is impure (hybrid individual).
- The two factors of each trait separate to form gametes, each gamete carry one factor of the trait.

B. What is the scientific explanation of the dominancy of the curly hair trait over the straight hair trait?

The curly hair trait is a dominant trait, controlled by two similar factors. Also, the straight hair trait is controlled by two similar factors. In offspring individuals, if the two factors are dominant or one of them is dominant while the other is recessive, the hair is curly. If the two factors are recessive, the hair is straight.

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Model Exam (5)

Answer the following questions.

First Question:

Complete the following statements:

1- Red mercuric oxide decomposes by heat into ………… and ……………
2- Sodium nitrate decomposes by heat into ………… and ………
3- Zinc reacts with hydrochloric acid to give …………… and …………………..
4- The factors that affect the speed of the chemical reaction include the concentration of reactants, ……. ……, ……… …… and … ……

Second Question:

A. Compare each pair of the following:

1- The oxidizing agent and the reducing agent.

2- The alternating current and the direct current.

B. : Mark (√) in front of the correct statement and (X) in front of the wrong statement.

1- Dwarfism is a continuous growth in the limb bones, consequently the person becomes a giant.
( )

2- The ability to roll the tongue is one of the dominant traits in humans.
( )

Third Question:

Choose the proper answer for each statement:

1- The hormone responsible for the appearance of the secondary male sex features in man is ……...

a- Estrogen b- Testosterone c- Insulin d- Thyroxin

2- On heating red mercuric oxide, it decomposes into ………

a- Oxygen and mercury hydroxide b- Mercury and hydrogen

c- Oxygen and mercury d- Water and mercury

3- When metal hydroxide is heated, it will give …….

a- Metal oxide only b- metal oxide and water vapor

c- carbon dioxide only d- water vapor only

4- The electric resistance is measured in ….

a- Ohms b- Amperes c- Volts d- Coulombs

5- The electromotive force is measured in ……

a- Ohms b- Amperes c- Volts d- Joules

Fourth Question:

Write down the scientific term that is expressed by each statement.

1- The process of breaking bonds in the molecules of reactants and forming new bonds in the molecules of products.

2- The state of the conductor that allows the charges to transfer from or to it

3- The spontaneous decay of the nuclei of some element atoms that exist in nature to achieve more stable composition.

4- If two pure individuals in two contrasting hereditary traits, they produce after crossing a generation carrying one trait of the parent which is the dominant. And the two traits are inherited in the second generation at a ratio 3:1

5- Organs that secrete hormones directly into the blood stream.

Fifth Question:

Answer the following:

1) Find the quantity of electricity passing during 7 minutes through a given cross section of a conductor due to a current of intensity 18 Amperes.

2) Find the potential difference between two points if work of 16600 Joules is done to transfer a quantity of charge of 600 Coulombs between them.

Answers Model Exam (5)

First Question: Complete the following statements:

1-Red mercuric oxide decomposes by heat into Mercury and Oxygen gas……………

2-Sodium nitrate decomposes by heat into sodium nitrite … and Oxygen gas ………

3-Zinc reacts with hydrochloric acid to give zinc chloride and hydrogen gas

4-The factors that affect the speed of the chemical reaction include the concentration of reactants, …….nature of reactants ……, ………temperature of reaction …… and …catalysts……

Second Question:

A.Compare each pair of the following:

1-The oxidizing agent and the reducing agent.

The reducing agent.	The oxidizing agent
Martials which remove oxygen or give hydrogen during the chemical reaction Or Martials which lose electron during a chemical reaction	Martials which give oxygen or remove hydrogen during the chemical reaction Or Martials which lose gain electron during a chemical reaction

2-The alternating current and the direct current.

The direct current	Alternating current
- Produced from electrochemical cells (simple cells) - Can be transferred for short distance - Cannot be converted to alternating current - Used in electroplating of metal and in working of some electrical instruments	- Produced from electric generators - Can be transferred for long distance - Can be converted to direct current - Used in working of some machines , electrical instruments and illumination

b.: Mark (√) in front of the correct statement and (X) in front of the wrong statement.

1-Dwarfism is a continuous growth in the limb bones, consequently the person becomes a giant.
(x) Gigantism.

2-The ability to roll the tongue is one of the dominant traits in humans. (√)

Third Question:

Choose the proper answer for each statement:

1-The hormone responsible for the appearance of the secondary male sex features in man is ……...

b- Estrogen b- Testosterone c- Insulin d- Thyroxin

2-On heating red mercuric oxide, it decomposes into ………

b- Oxygen and mercury hydroxide
b- Mercury and hydrogen
c- Oxygen and mercury
d- Water and mercury

3-When metal hydroxide is heated, it will give …….

b- Metal oxide only

b- metal oxide and water vapor

c- carbon dioxide only

d- water vapor only

4-The electric resistance is measured in ….

b- Ohms b- Amperes c- Volts d- Coulombs

5-The electromotive force is measured in ……

b- Ohms b- Amperes c- Volts d- Joules

Fourth Question: Write down the scientific term that is expressed by each statement.

1-The process of breaking bonds in the molecules of reactants and forming new bonds in the molecules of products. (chemical reaction)

2-The state of the conductor that allows the charges to transfer from or to it.(electrical potential)

3-The spontaneous decay of the nuclei of some element atoms that exist in nature to achieve more stable composition.(natural radioactivity)

4-If two pure individuals in two contrasting hereditary traits, they produce after crossing a generation carrying one trait of the parent which is the dominant. And the two traits are inherited in the second generation at a ratio 3:1 (Mendel's first law)

5-Organs that secrete hormones directly into the blood stream. (ductless glands)

Fifth Question: Answer the following:

1)Find the quantity of electricity passing during 7 minutes through a given cross section of a conductor due to a current of intensity 18 Amperes.

Q = I x t

= 18 X (7 X 60)

= 18 X 420

=7560 Coulombs

2)Find the potential difference between two points if work of 16600 Joules is done to transfer a quantity of charge of 600 Coulombs between them.

$$V = \frac{work\ done\ (J)}{quantity\ of\ electricity\ (C)}$$

$$V = \frac{16600}{600} = 27.67\ \text{Volts}$$

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Model Exam (6)

Answer the following questions.

First Question:

A. Complete the following statements:

1- The chemical reaction is … … in the molecules of reactants and forming new … …in the molecules of products.

2- The nuclear energy is used in medicine in …. …and… …….. of some diseases.

B. Give reasons for:

1- The refrigerator is used to preserve food.
2- Using alternating current is preferred than direct current.

Second Question:

Compare each pair of the following:

1- Oxidation and reduction (in terms of their definition)

2- The ammeter and the voltmeter (in terms of their use)

Third Question:

A. Mark (√) in front of the correct statement and (X) in front of the wrong statement. Then correct what is wrong.

1- The scientist Ohm discovered radioactivit ( )

2- Hormones are secreted by ductal glands. ( )

B. Find the electric current intensity due to the passage of a quantity of electricity of 6000 Coulombs through a given cross section of a conductor during 10 minutes.

Fourth Question:

Choose the proper answer for each statement:

1- When Sodium chloride solution reacts with silver nitrate solution, a ……….. precipitate is formed of silver chloride.

a- Red b- White c- Reddish brown d- Blue

2- The electric resistance is measured in ……

a- Ohms b- Amperes c- Volts d- Coulombs

3- The electric current intensity is measured in ………

a- Coulombs b- Amperes c- Volts d- Joules

4- The unit of measuring the amount of the absorbed radiation is the ….

a- Curie b- Rem c- Rontgen d- Ampere

5- A part of the nucleic acid DNA responsible for the inheritance of a trait is the …

a- Gene b- Gamete c- Cytoplasm d- Nucleus

Fifth Question:

Write down the scientific term that is expressed by each statement.

1- Reactions in which an element replaces another less reactive element.

2- The law that states that the intensity of electric current through a conductor is directly proportional to the potential difference between its terminals at constant temperature.

3- The state of the conductor that allows the charges to flow from or to it.

4- The spontaneous decay of the nuclei of some element atoms that exist in nature to achieve more stable composition.

5- If two pure individuals in two contrasting hereditary traits, they produce after crossing a generation carrying one trait of the parent which is the dominant. And the two traits are inherited in the second generation at a ratio 3:1

Answers Model Exam (6)

First Question:

A.Complete the following statements:

1-The chemical reaction is …breaking down of bonds… in the molecules of reactants and forming new …bonds…in the molecules of products.

2-The nuclear energy is used in medicine in ….diagnosis …and… treatment …….. of some diseases.

B.Give reasons for:

1-The refrigerator is used to preserve food.

As the refrigerator cools the food down, this reduces the speed of chemical reactions that are made by microorganisms to spoil the food.

2-Using alternating current is preferred than direct current.

Alternating electric current is characterized by:
- It can be transported for a long distance easily.
- It can be converted into direct current

Second Question:

Compare each pair of the following:

1-Oxidation and reduction (in terms of their definition)

Oxidation: is a chemical process in which the percentage of oxygen increases in a substance or the percentage of hydrogen decreases or a substance loses an electron or more.
While **reduction:** is a chemical process in which the percentage of oxygen decreases in a substance or the percentage of hydrogen increases or a substance gains an electron or more.

2-The ammeter and the voltmeter (in terms of their use)

Ammeter is used to measure the current intensity. While **voltmeter** is used to measure the potential difference between two points.

Third Question:

A.Mark (√) in front of the correct statement and (X) in front of the wrong statement. Then correct what is wrong.

1-The scientist Ohm discovered radioactivity. (X) (Becquerel)

2-Hormones are secreted by ductal glands. (X) (ductless glands) (endocrine glands)

B.Find the electric current intensity due to the passage of a quantity of electricity of 6000 Coulombs through a given cross section of a conductor during 10 minutes.

$$I = \frac{Q}{t} \qquad I = \frac{6000}{10x60} = 10 \text{ Amperes}$$

Fourth Question: Choose the proper answer for each statement:

1-When Sodium chloride solution reacts with silver nitrate solution, a ……….. precipitate is formed of silver chloride.

b- Red b- White c- Reddish brown d- Blue

2-The electric resistance is measured in ……

b- Ohms b- Amperes c- Volts d- Coulombs

3-The electric current intensity is measured in ………

b- Coulombs b- Amperes c- Volts d- Joules

4-The unit of measuring the amount of the absorbed radiation is the ….

b- Curie b- Rem c- Rontgen d- Ampere

5-A part of the nucleic acid DNA responsible for the inheritance of a trait is the …

b- Gene b- Gamete c- Cytoplasm d- Nucleus

Fifth Question: Write down the scientific term that is expressed by each statement.

1-Reactions in which an element replaces another less reactive element.

(Simple substitution reaction)

2-The law that states that the intensity of electric current through a conductor is directly proportional to the potential difference between its terminals at constant temperature.

Ohms law

3-The state of the conductor that allows the charges to flow from or to it.

Electric potential of a conductor

4- The spontaneous decay of the nuclei of some element atoms that exist in nature to achieve more stable composition.

Radioactivity

5-If two pure individuals in two contrasting hereditary traits, they produce after crossing a generation carrying one trait of the parent which is the dominant. And the two traits are inherited in the second generation at a ratio 3:1

Mendel's first law or law of segregation

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